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Investments in Tertiary Education in the Context of Labor Market needs at the Beginning of the 21st Century

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Abstract

Based on empirical research conducted at regional level (within the EU) as well as at global level, it can be state that human potential is not fully utilized. This is also true for the potential of tertiary educated of people. Tertiary education, which does not correspond to the current requirements of labor markets, results not only in the ineffective use of limited resources but also in the loss of chances to change or maintain both economic and social status. The aim of the paper is to verify the hypothesis that a cause of inadequate use of potential of tertiary educated people is a reflection of inadequate structure and allocation investment in tertiary education. Comparing the interrelation between tertiary education (its individual degrees) and the realistic possibility of successful application in labor markets within individual EU - countries will allow to identify the measures that need to be implemented in the area of structure and allocation of investment in tertiary education. It must be borne in mind that if acquired tertiary education does not allow for the acquisition of employment in domestic country creates space for migration to those countries that will allow it. Achieving the goals implies the application of a holistic approach and the application of comparative analysis.

Key Words: *investment in tertiary education, human capital, labor market, employment, labor migration*
JEL Classification: *I 20, J 20*

1. Introduction

The finding that a significant part of the human capital potential remains undeveloped due to a lack of education and employment opportunities or both causes is not accidental. Many of today's education systems do not lead to the creation of skills that would lead to the possibility of applying to today's labor market. Current education systems focus on developing cognitive skills. Now there are important skills that relate to the individual's ability to work together, to think creatively and to solve problems independently. In the document *The Global Human Capital Trends* states that 90% of all jobs will require a certain level of digital skills. However, 40% of Europeans have no digital skills today. Radical changes in labor, work organization and labor market requirements cannot be ignored, especially if growth of productivity remains low despite the introduction of new technology into the business environment. The problem lies in a strategy of forming human capital that does not meet current demands. If investing in education is an organic part of investing in human capital we need to pay extra attention to them. Not only size of investment, but especially the structure of investment in education as well as the effectiveness of their allocation are extremely important. This statement applies specifically to tertiary education. This is not only about the significant financial funds that had to be incurred but also about expending time and effort which the successful completion of the university studies presupposes.

2. Literature Review

Several authors have pointed out in the past the importance of knowledge, skills and experience in creating new products as well as their importance for the size of disposable income. In this context, it is necessary to mention two influential economists A. Smith and A. Marshall. Marshall's idea that investments in human beings are the most important is generally known, and at present it is particularly up to date. The origins of the theory of human capital date back to the late 1950s and early 1960s. Schultz and Becker belong to those economists who enriched the theory by justifying the need for a new approach to work and by justifying the need the investment on education. Schultz (1963) in its work *The Economic Value of Education* states that expenditures on education do not constitute the consumption expenditure, but investment that requires an analysis of return on investment. The generalization of knowledge about the process of formation of human capital and its impact on economic and social development can be described as an inspiring impulse for further investigation. Becker took the view that education evaluates human capital but at the same the acquisition of education implies certain costs. The major cost is the time taken to studying. Entities making decisions for which they are considering the opportunity cost. Becker in collaboration with Murphy in article *Education and Consumption Effects of Education from the perspective of households and in view of the labor market* highlighted the different effects of investment in

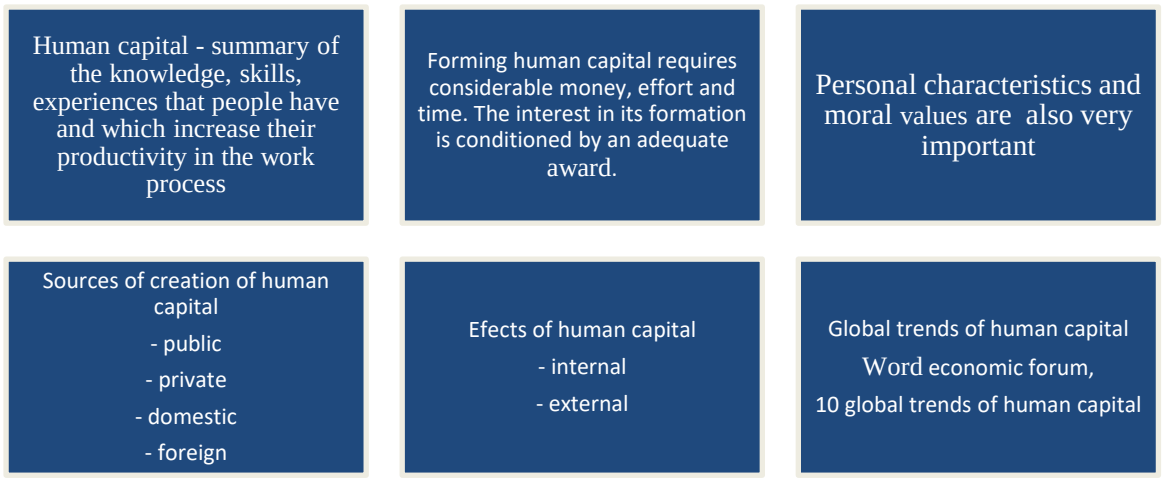
education (Becker, Murphy, 2007). From other economists who focus attention on a new understanding of the capital and its effects, as well as the need for investment as the primary condition not only a quantitative increase of capital, but particularly increase of the quality characteristics of capital may be mentioned by economists who developed the theory of endogenous economic growth. Among the authors of theory of endogenous economic growth may be mentioned especially Paul Romer. Romer perceived the capital in the unity of the physical and human capital. Romer also highlights the quantitative and qualitative increase of capital. Improving the quality of capital is not only necessary but almost essential for the successful solution of new problems, respectively. the discovery of new innovative practices. Capital determines efficiency of the economy, and therefore investment in education and scientific research is a prerequisite for increased competitiveness of the economy and growing prosperity as society as a whole as well as individual entities (Romer, 1986, 1990).

If it is assumed rational behavior of subjects, these subjects will consider the investment in education and the effects that education brings. They will consider whether additional money spent on education will be compensated by higher incomes or non – cash benefits. If they expect a positive difference can also expect a willingness to make investment in education. Investments in education do not guarantee attractive job, change of social status but at least provide a more realistic chance to succeed in a competitive job market. Economists point to the existence of certain the irregularities, which may lead to a loss of motivation, because the expectations of positive yields from investment into education may not be met in some cases. It may be a variety of income from investments in education with regard to race, sex, religion, political engagement, or in the case of placement in various segmented labor markets, which have a different valuation for the same knowledge, skills and abilities.

World Economic Forum in t*he Human Capital Report 2016* states that investing in human capital goes beyond an economic necessity. It is the basis for all individuals to live up to their full potential. The report further states that a nation´s human capital endowment – the knowledge and skills embodied in individuals that enable them create the economic value – can be a more important determinant of its long-term success than virtually any other resources. Very important is the statement that human capital is critical not only to the productivity of society but also the functioning of its political, social and civil institutions. The report also states that it is necessary to find the answers to the following questions: How we learn throughout? How we re-train those that are facing declining returns to their skills? How we educate the next generation? The primary goal is to prepare the world´s workforce for the requirements of the 21st century (The Human Capital Report 2016, pp. 1-3). Human Capital Report gives a number of key issues that can support better design of educational policy as well as future workforce planning.

The report *Global Human Capital Trends Report and Survey* states that there are radical changes in the present, which also require a radical change of mind. Demand for workforce is changing significantly therefore it is also necessary to change significantly a supply of workforce. Workforce is more digital, more global, diverse, and social media - proficient. At the same time, these changes create new job opportunities. The report identifies ten basic trend in human capital: the organization of the future: arriving now; careers and learning: real time, all the time; talent acquisition: enter the cognitive recruiter; the employee experience: culture; engagement and beyond; personal management: play a winning hand; leadership disrupted: pushing the boundaries; digital HR: platforms, people, and work; diversity and inclusion; the future of work: the augmented workforce (Walsch, Volini, 2017, pp.7-8).

Figure 1: Human Capital



Source: Own processing

An objective necessity and real willingness to invest in education are confronted with the available resources. This is no full consensus about whether investment in education should be made only from domestic sources, especially public sources or they should have a greater role the private and foreign sources.

The most frequent arguments justifying the need to cover investments in education from public resources include arguments: acquiring of education should not be the domain of the rich people; everyone should have access to education; everyone should be allowed to achieve the same standard; with education are associated not only internal but also external effects. One of the important arguments for public investment in education is the argument that educated parents create space for positive intergenerational knowledge transfer and for acquiring the ability to integrate into society. Education makes it easier to establish contacts between children from different social strata and thus creates more chances to find work and to integrate in working teams (Jackson, Victor, 2014). Also, other authors point to the importance of creating space for intergenerational transfer of knowledge that will enable the next generation easier to

apply in the labor market. They emphasize the fact that each child should have the opportunity to achieve a quality education that corresponds to his or her potential. Payne believes that investing in education and building relationships between people are a prerequisite for changes in the social status of individuals (Payne, 2006, pp. 49-65, pp. 151-165, pp. 199-210). Anne-Marie Brook pointed out the possibility of using education to disrupt disadvantaged intergenerational transfers. Those who did not have access to education had no information they could give to their children. On the other side, the higher level of parental education can have more a positive impact on their children´s decision - making about their willingness to learn (Brook, 2008, pp. 1-35).

On the other side, the possibilities of governments are limited and governments are bound to keep public finances on a level that is sustainable in the long term. It is important that were created adequate legislative conditions for use of alternative sources. In favor of using the alternative sources can be argue that the preference for long-term financing investment in education from public sources often lead to abuse of the right to education, which can be characterized as formal involvement in the educational process or as high passivity and arrogance against the obligation to obtain a certain education, which the society deems necessary. The consequence is reflected in the low efficiency of investment in education. One of the proposed solutions is the participation of all subjects to cover investments in education.

One of organic part of domestic resources there are the private resources of households and firms. If households will see the achievement of higher education as a prerequisite for successful placement in the labor market, ensuring a higher level of income and a higher standard of living will have an incentive to modify their behavior in the direction of reducing consumer spending and increase savings. In case of lack of own resources households have a real chance to acquire the necessary funds through loans. Change in access to credit, particularly overcoming fear of commitment and looking at loans as something immoral, as well as a demonstration effect or the effect of imitation can play an important role in this direction. Firms can financially contribute to the formation of specific human capital. A direct and flexible application of acquired knowledge creates the preconditions for growth performance and competitiveness of firms. Firms can play an important role in the financing of applied research. It is not possible to unambiguously state that the participation at the applied research and the promotion of specific capital are the typical forms of firm behavior. Firms consider that investments in education do not touch them because it is problem of employees. However, firms should have a crucial role in stepping up investment in education, and also during interview about the global education and the global employment.

Countries can request the external sources. These options, however, assume knowledge foreign languages, ability people to formulate the requirements, as well as ability to affect the people who decide on the allocation of funds.

3. Methodology

3.1 Research Questions

Our goal is to contribute to a discussion of the need for investment in education, to contribute to a discussion about the structure and allocation of investment in education in the face of labor market demands in the 21st century, also to contribute to the change of the lax approach to the demands of today's labor markets. Our goal is to contribute to the discussion on the need to use all available resources, both public and private, domestic and foreign. We think that exists the need to require take responsibility, not only political, for inefficient use of resources. Contribute to a discussion on the need to create the conditions for a return the public resources as well as and about forms of this return. This applies especially to tertiary education. If a graduate of tertiary education does not use his knowledge in his home country and goes abroad. The aim is to verify the hypothesis that a cause of inadequate use of potential of tertiary educated people is a reflection of inadequate structure and inappropriate allocation investment in tertiary education. On the basis of the comparison of the interrelation between tertiary education (its individual degrees) and the possibility of successful employment within individual EU countries it will be possible to identify the measures that need to be implemented in the area of structure and allocation of investment in tertiary education.

3.2 Modeling Volatility

The processing of the contribution anticipated the application of a wide range of scientific research methods (methods of scientific analysis and synthesis, method of scientific abstraction, as well as methods induction and deduction) which are a prerequisite not only for mapping the existing views on the given issue but also for the theoretical generalization of a wide range of arguments. When verifying the hypothesis, it was necessary to apply a holistic approach and apply a comparative analysis.

3.3 Data

The sources that reflect the development of investments at different levels of education, but also according to their structure according to the sectors to which they are targeting. The sources that give the information about the expenditures on education in different contexts. The primary sources are statistical materials of EU which processing Eurostat, materials of the European Institutions as European Commission, International institutions as Legatum Institute (Legatum Prosperity Index), World Economic Forum (Human Capital Report, Human Capital Index), The sources that reflect employability, depending on the level of education received, as well as the study department: The World Economic Forum´s Future of Jobs report, Eurostat: Statistics

explained. Rate of Unemployment in Europe; Youth unemployment rate in Europe, 2017, The EU in the world, 2018.

4. Results and Discussion

Tertiary education represents the highest level of education. The success of tertiary education is conditioned by the quality of previous levels of education. It is not realistic to expect highly skilled people if they don´t have managed to cope with lower levels of education. This means that only high-quality education at individual levels of education can be reflected in a high-quality, highly qualified workforce that can be fully applied to the labor market. Discussions include a wide range of arguments that justify the need for investment in education at all levels. From our point of view, it is important to consider not only the arguments that specify macroeconomic or microeconomic benefits of investment in education but also arguments that specify non - economic benefits.

The arguments justifying the potential macroeconomic benefits of investment in education which on are as follows. Investments in education create: a scope for improving the quality of resources, their productivity and thereby increasing the competitiveness and economic performance; a space for greater labor mobility; a scope for increasing the possibility of the application of new scientific knowledge into practice, acceleration the conversion of inventions of different orders on innovations that create a space for the use of previously unknown sources, or the use of new advanced technologies that save the existing resources; a space for the implementation of structural changes that have been subject to the availability of skilled labor; a scope for increasing employment or decline in the unemployment rate and decrease pressure on public social expenditure; a space for securing the long-term equilibrium rate of economic growth and ensure the growth of the welfare of society as a whole and its individual members.

The arguments justifying the potential microeconomic benefits of investment in education are as follow. From our point of view, investments in education create: a more realistic chance of placing in the labor market; a more realistic chance of achieving higher than average labor income**;** a more realistic chance to achieve greater wealth**;** a space for growth of labor productivity**;** a space for creative behavior**;** a space for flexible adaptation to changing labor market conditions**;** a space to achieve greater competitiveness in the labor market**;** a space for intergenerational transfer of knowledge, and a more realistic chance of placing in the labor market of future generations**;** a space for more options to find employment on the global labor market.

The arguments justifying the potential non-economic benefits of investment in education are as follow. Investments in education create a space for a mitigation of social tensions or elimination of sharp social conflicts; a democratization of the society; a growth of self-confidence, self-esteem and satisfaction; a space for change of social status; a space for the

acquisition of the ability to liaise with people from others walks of life; a scope for increasing the willingness to participate in society and contribute to solving the problems of the community and society.

Investment in education indicates the level of resources available to education providers to deliver education. It is interesting how these resources are apportioned between different levels of education. It is also interesting whether investment in education is greatly influenced by supply and demand factors, demographic structure, income per capita, prices for educational resources, but also with most other factors.

Government expenditure on education as a percentage of GDP has remained relatively stable in EU countries at the end of 20st and at the beginning of 21st century. Table 1 captures percentage of public expenditure on education per GDP, the share of the educational expenditure in total public expenditure, number students on tertiary education as well as percentage of the students on different levels of tertiary education.

Table 1: Different Levels of Education

	% GDP on education					**% of total public expenditures on education**					**Number of students on tertiary education (thousand)**	**% of students on different levels of tertiary education**			
	∑	1	2,3	4	5	∑	1	2,3	4	5		6	7	8	9
EU 28	**4.9**	1.5	2.0	2.7	0.6	**10.3**	3.2	4.2	1.6	1.4	19 530.6	7.2	61.4	27.8	3.7
EA 19	**4.7**	1.4	1.9	0.8	0.5	**9.7**	3.0	4.0	1.6	1.3	.				
BE	**6.4**	2.1	2.5	0.9	0.9	**11.9**	3.8	4.7	1.7	1.7	504.7	4.8	72.5	19.4	3.3
BG	**4.0**	0.9	1.9	0.8	0.3	**9.8**	2.3	4.7	2.1	0.7	279.0	-	67.0	30.7	2.3
CZ	**4.9**	1.0	1.9	0.8	1.2	**11.8**	2.4	4.6	1.9	2.8	395.5	0,1	60.0	33.7	2.4
DK	**7.0**	3.1	1.8	1.7	0.4	**12.8**	5.7	3.4	3.1	0.6	313.8	11.2	62.2	23.5	3.2
DE	**4.2**	1.2	1.7	0.8	0.5	**9.6**	2.7	3.7	1.9	1.2	2 977.8	0.01	60.2	33.2	6.6
EE	**6.1**	2.0	1.8	1.3	1.1	**15.1**	5.0	4.4	3.1	2.5	55.2	-	65.8	29.0	5.3
IE	**3.7**	1.3	1.3	0.7	0.4	**12.4**	4.5	4.5	2.4	0.9	214.6	7.7	75.2	13.3	3.8
EL	**4.3**	1.3	1.3	0.9	0.8	**7.8**	2.4	2.3	1.7	1.4	677.4	-	88.4	8.1	3.5
ES	**4.1**	-	-	-	-	**9.3**	-	-	-	-	1 963.9	19.0	61.3	18.1	1.6
FR	**5.5**	1.4	2.5	0.6	1.0	**9.6**	2.5	4.3	1.1	1.6	2 424.2	20.4	40.9	35.8	2.8
HR	**4.7**	2.4	0.9	1.2	0.3	**10.1**	5.1	2.0	2.5	0.5	162.0	0.06	62.3	35.7	1.9
IT	**4.0**	1.5	1.8	0.4	0.3	**7.9**	3.0	3.7	0.7	0.6	1 826.5	0.4	58.9	38.9	1.8
CY	**5.7**	1.8	2.0	1.3	0.5	**14.2**	4.5	5.1	3.3	1.3	37.2	8.3	53.8	34.7	3.0
LV	**6.0**	2.1	1.7	1.0	1.3	**16.2**	5.6	4.6	2.7	3.3	85.9	8.7	58.9	19.7	2.6
LT	**5.4**	0.8	2.1	1.2	1.2	**15.4**	2.4	6.0	3.4	3.5	140.6	-	76.9	21.3	1.8
LU	**5.2**	1.6	1.8	0.8	1.0	**12.4**	3.9	4.1	1.9	2.4	6.9	8.7	46.4	36.2	8.7
HU	**5.2**	1.3	1.5	0.9	1.3	**10.3**	2.6	3.1	1.9	2.8	307.7	3.8	70.0	24.1	2.3
MT	**5.5**	1.4	2.2	1.0	0.9	**13.3**	3.4	5.4	2.3	2.3	13.2	18.9	53.0	26.5	0.6
NL	**5.4**	1.7	2.1	1.4	0.2	**12.0**	3.8	4.8	3.1	0.5	842.6	2.2	76.8	19.3	1.7
AT	**5.0**	1.4	2.2	0.8	0.5	**9.6**	2.8	4.2	1.5	1.1	426.0	18.3	43.1	33.0	5.7
PL	**5.2**	1.7	1.4	1.5	0.6	**12.6**	4.2	3.4	3.5	1.5	1 665.3	0.2	66.3	30.9	2.6
PT	**6.0**	1.7	1.7	1.0	1.4	**12.4**	3.5	3.7	2.1	3.1	337.5	0.2	60.4	33.8	5.7
RO	**3.1**	0.6	1.2	0.8	0.4	**8.6**	1.6	3.5	2.2	1.2	541.7	-	65.4	31.1	3.6
SI	**5.6**	2.1	2.0	1.0	0.5	**11.6**	4.3	4.2	2.2	1.0	85.6	13.4	57.1	26.4	3.1
SK	**4.2**	1.5	0.7	0.7	1.3	**9.3**	3.4	1.6	1.5	2.8	184.4	1.5	55.5	38.0	5.0

FI	**6.2**	1.3	2.7	1.9	0.4	**11.0**	2.2	4.8	3.3	0.6	302.5	-	72.5	20.9	6.6
SE	**6.5**	4.0	1.0	1.1	0.3	**13.0**	8.0	2.1	2.3	0.6	428.6	5.9	57.5	31.6	5.0
UK	**5.1**	1.4	2.7	0.3	0.7	**12.0**	3.2	6.3	0.8	1.7	2 330.3	11.7	65.4	18.1	4.8

Source: Own processing on the sources:

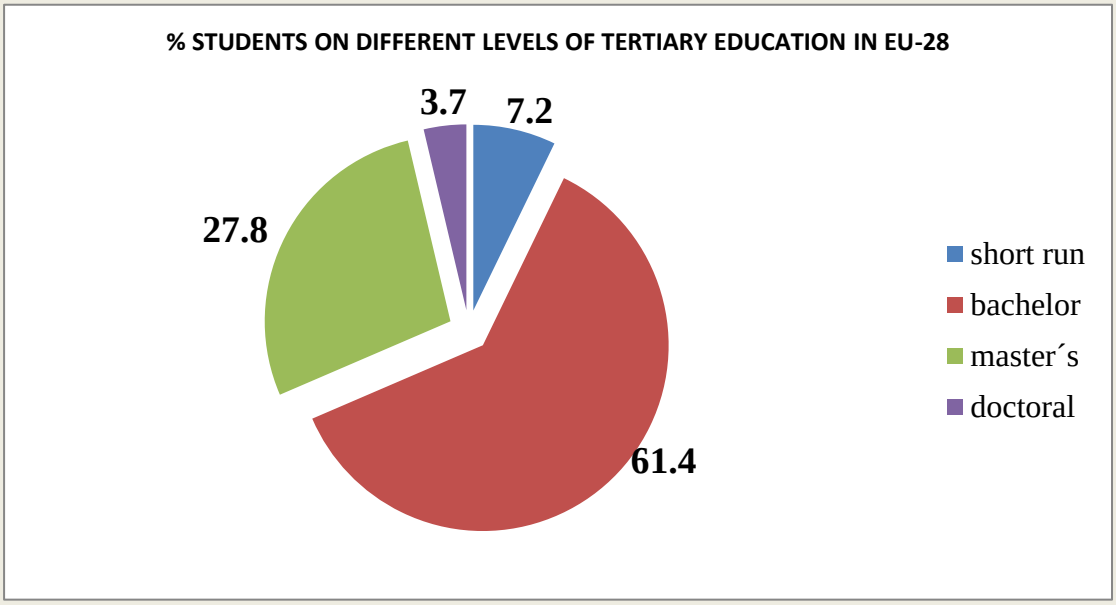
File:Total_general_government_expenditure_on_education_2015, Eurostat, 2017; Number of tertiary education students by level and sex, 2015 (thousands), Eurostat, 2017.
1 pre-primary and primary education, 2 secondary education, 3 post-secondary non-tertiary education, 4 tertiary education, 5 Σ education not definable by level + subsidiary services to education+ R&D education + education n. c. e (not elsewhere classified), 6 short-cycle tertiary, 7 bachelor´s or equivalent, 8 master´s or equivalent, 9 doctorate or equivalent.

In 2015, general government expenditure on education in the EU-28 amounted 4.9% of GDP. The highest public expenditure on education as a percentage of GDP can see in the Nordic countries, in Belgium, in Estonia, in Latvia, and in Portugal. The lowest expenditure is recorded by Romania (3.1%), Ireland (3.7%) and Italy (4.0%). The highest public spending on tertiary education is in the following EU countries - Finland, Denmark, Poland, the Netherlands, Estonia, and Cyprus. On the other side, the lowest expenditures are in United Kingdom and in Italy. In the case of public expenditure on education as percentage of total public expenditures, 17 countries spend more than is the average EU countries (10.3%). In contrast, lower than the average share exists in 10 countries, in Hungary is equal to the average share. The lowest share exists in Greece (7.8%) and in Italy (7.9%). A crucial part of public spending on education is spent on securing primary and secondary education. The highest share of public spending on tertiary education out of total public spending (over 3%) is related to the following EU countries: Poland, Latvia, Lithuania, Estonia, Denmark, Finland, Cyprus, and the Netherland.

Tertiary education can play an essential role in society. Demand for highly skilled people is constantly growing, and therefore it is necessary to pay attention to tertiary education. The gap between demand and supply of qualified workforce is a gap that many EU countries have to eliminate if real changes in labor markets are to take place. There is an increased demand for autonomous thinking, creativity, effective communication, and the ability to use limited resources efficiently. The willingness to study outside of the home country and the willingness to migrate for work is positively evaluated. In the EU-28 countries there were 19.5 million tertiary educational students of which 7.2% were following short cycle tertiary courses, 61.4% were studying for Bachelor´s degrees, 27.8% were studying for Master´s degrees, and 3.7% were studying for Doctoral degrees. In terms of needs related to the fourth industrial revolution, the need of the students with tertiary education grows. At the same time, students with higher tertiary education should also have a better chance of succeeding in a national, regional or global labor market. The data in the table show, that the bulk of students receive a bachelor's degree or equivalent in most EU countries. In contrast, in the case of a master's degree, the situation is not so favorable. Among the EU countries, the most favorable outcomes at this level of tertiary education have been achieved in countries (above 35%): Luxemburg, France, Italy,

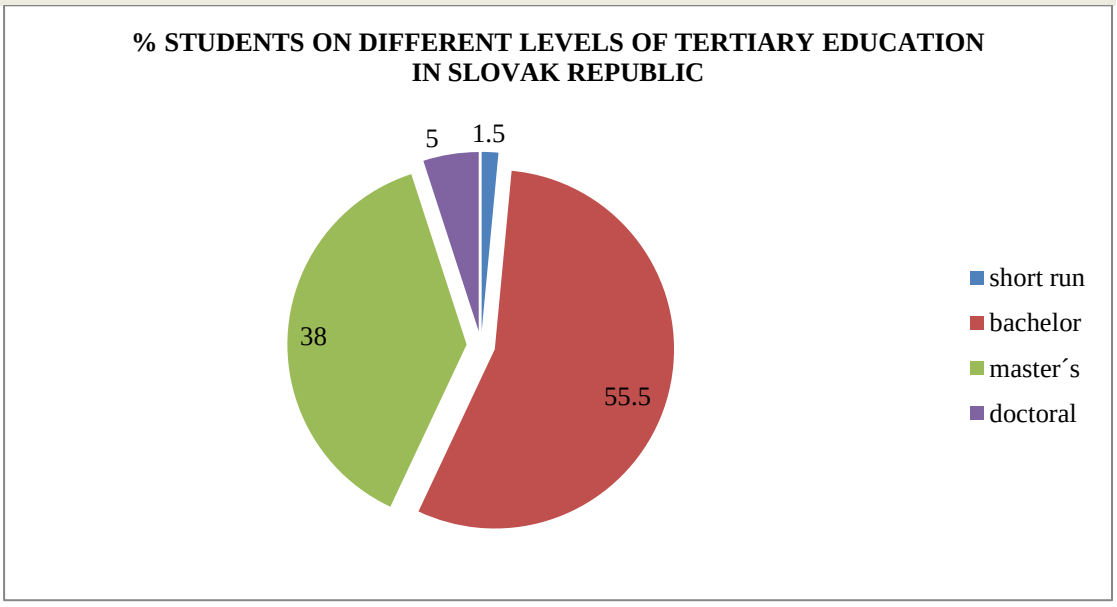
Hungary, and Slovak republic. In the nine countries, the master´s degree exceeded 30% share. On the contrary, the lowest number of students wishing to achieve Master's degree can be seen in six EU-countries, of which it has the lowest share – 8.1% Greece.

Figure 2



Source: Eurostat, own processing

Figure 3



Source: Eurostat, own processing

Three forms of tertiary education exist in all EU countries. It is Bachelor, Master´s and Doctoral level of tertiary education. The short-cycle tertiary education exists only in some EU countries. This form of tertiary education is practically –based and professionally – specific with aim to prepare of students for the labor market.

In the Europe 2020 Strategy was formulated the aim that 40% of people aged 30-34 years should have higher education. The countries that crossed this border at the beginning of the

second decade of the 21st century are: Belgium, Denmark, Ireland, Spain, France, Cyprus, Lithuania, Luxemburg, Netherland, Finland, Sweden, and United Kingdom. On the other side, countries with a share of less than 30% are: Bulgaria, Czech Republic, Croatia, Italy, Malta, Hungary, Austria, Portugal, Romania, and Slovak Republic.

We can sense as a tool for capturing the complexity of education, employment and workforce dynamics Human Capital Index. This index gives a number of key issues that can support better design of education, productive and healthy workforce. The Human Capital Index assesses learning and employment outcomes on a scale from 0 to 100 and specifies the level of human capital, skills and employment available to people in five distinct age groups: 0-14; 15-24; 25-54; 55-64; 65 and more. The aim is to capture the full demographic profile of a country. Human Capital Index covers 45 indicators in two sections. First section captures regional and income groupings, reflects performance of economies. Second section captures two horizontal subthemes of the Index – Learning and Employment.

Finland effectively uses 85.86% of their human capital potential. The country benefits from a well - educated young population. But also, Finland benefits from the highest score for the quality of primary schools. Its 25-54 age group core working population shows the highest tertiary educational attainment rate in the Western Europe region and fourth best overall in the world. Also, other Nordic countries are very successful (Sweden 83.29% and Denmark 82.47%). Other EU countries, such as Belgium and the Netherlands, have a good position. However, the Netherlands has a problem with relatively low labor force participation and relative high unemployment rate among 55-64 years. Human Capital Index shows that only 12 EU countries are able to use 80% of their human capital potential or more, 16 EU countries 70% or more but less than 80% (Human Capital Report, 2017, pp. 1-5).

The utilization of potential is highest in the age group 0-14 in 17 EU countries (over 90%), in 10 countries it is above 80% and in Bulgaria it is below 80%. In the age group 15-24, the utilization of potential is above 80% in Nordic countries and in the Netherland), over 70% in other EU countries except Spain. In the next age group 25-54, only Finland and Sweden make use of the potential above 80%, other countries use the potential above 70% except five countries (Italy, Croatia, Greece, Romania and Spain with utilization of potential less than 70 but above 60%. For the 55-64 age group the use of the potential is more than 80% in the five EU countries, while the other EU countries use potential more than 70% but less than 80% with the exception of Portugal.

The part of human capital potential remains undeveloped due a lack of learning or employment opportunities or both. Report states, that many of today´s education systems are disconnected from the skills needed to function in today´s labor markets. Current educational systems seek to develop cognitive skills. At present, much more important non-cognitive skills

are related to an individual's ability to co-operate, innovate and solve the problems (Human Capital Report 2016, p. 3). In many countries, investments in education have not resulted in high employment. Several EU countries address the problem of considerable unemployment, especially of young people. In age group 15 – 24 years, rate of unemployment young people is 46.6% in Greece, 38.6% in Spain, 37% in Italy, and in six EU countries rate of unemployment of young people was higher than 20%. The average of EU-28 is less than 20%. The unfavorable results were also reached in age group 25-64 (Eurostat. Statistics explained; Rate of Unemployment in Europe; Youth unemployment rate in Europe, 2017).

In 2015, in the EU Member States, the highest employment rate (82.7%) was applied to persons who had completed some of the tertiary education. On the contrary, the lowest employment rate (52.6%) was associated with persons who completed primary education or lower secondary education. The employment rate of person with secondary education was 70.7% (Eurostat, Employment statistics, 2015).

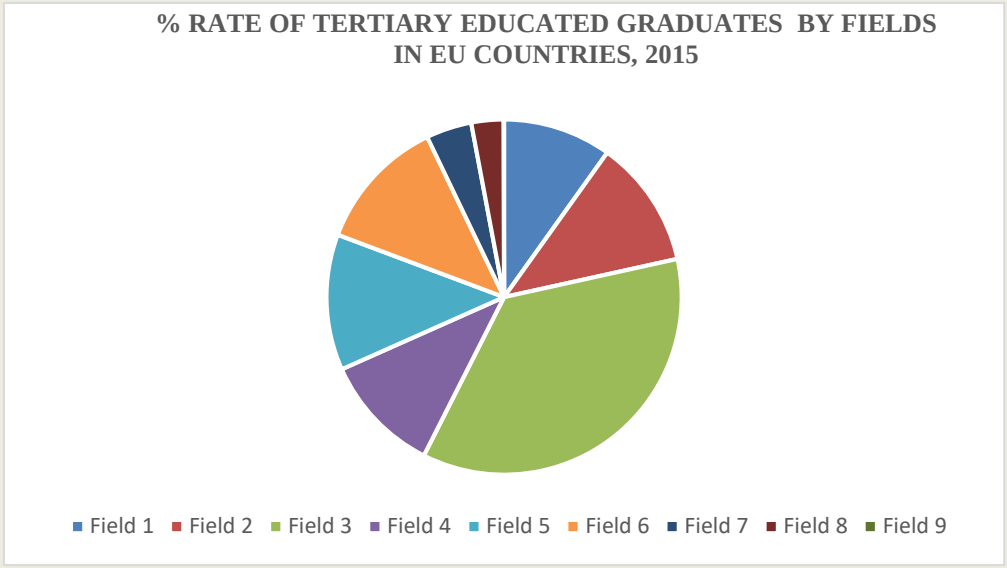
Table 2: Employability in Terms of Completion of Various Levels of Education

% average in Countries of EU	Persons with tertiary Education	Persons with secondary education	Persons with primary education
Employment rate*	82.7	70.7	52.6
Rate of unemployment**	5.2	7.5	16.3
Average time of job search	5 months	7.4 months	9.8 months

Sources: Own processing. Key data on Education in Europe, Eurostat. * Population aged 25-64 years; ** in 2017 rate of unemployment was more favorable (4.2; 6.0; 13.9),

With regard to the structure of education, stereotypes persist, making it difficult to find work at the labor market. Across the EU–28, almost one third (32.3%) of all students in tertiary education were studying social sciences, journalism, information, business, administration or law in 2015. There are differences between the Member States of EU. The share of graduates in these fields was relatively low in Finland and Spain (over one quarter of all graduates), while much higher shares were registered in Luxemburg (45.8%) and Bulgaria (49.8%). The differences exist between the EU Member States also in other fields.

Figure 4



Source: Own processing. Eurostat Field 1 Education (9.3%), Field 2 Arts and Humanities (11.0%) Field 3 Social sciences, journalism and information, business, administration, law (33.8%) Field 4 Natural sciences, mathematics, statistics, information, and communication technologies (10.3%) Field 5 Engineering, manufacturing, construction (13.9%) Field 6 health and welfare (13.7%) Field 7 Services (3.7%) Field 8 Agriculture, forestry, fisheries, veterinary (1.7%) Field 9 others (0.2%).

Highlighting need for investments in education and the identification of potential economic effects of investments in education is desirable, but without real resources, the expected change is not possible. Justification of exploitation especially public resources is justified by the fact that acquiring of education should not be the domain of the rich people, but everyone should have access to education and everyone should be allowed to achieve the same standard of living. It also underlines the fact that education is associated with internal and external effects. Public resources are limited and they are bound to keep public finances on a level that is sustainable in the long term, and therefore should create favorable legislative conditions for the use of alternative sources.

In the EU-28, the deficit-to-GDP ratio fell from -3.0% in 2014 (13,958 billion) to -2.4% in 2015 (14,635 billion) and in the EA-19 fell from -2.6% (9,899 billion) to -2.1% (10,338 billion). Three EU Member States - Luxembourg, Germany and Estonia - recorded a surplus of public finances in 2015. Sweden showed a balance without surplus and deficit (0.0%). 17 EU Member States, namely Lithuania, the Czech Republic, Romania, Cyprus, Austria, Latvia, Netherlands, Hungary, Bulgaria, Denmark, Ireland, Belgium, Poland, Finland and Slovenia recorded deficits below -3.0% of GDP in 2015. The deficit ratio to GDP exceeded the -3.0% threshold in six EU countries: Greece (-7.2%), Spain (-5.1%), United Kingdom (-4.4%), Portugal (-4.4% %), France (-3.5%) and Croatia (-3.2%). All six countries with a deficit ratio of more than -3.0% of GDP reported a deficit above -3.0% for each of the three previous years. The public debt-to-GDP ratio declined in EU-28 from 86.8% at the end of 2014 to 85.2% at the

end of 2015 and in the EA -19 from 92.0% to 90.7%. In 2015, the public debt-to-GDP ratio was above 60% in the 17 EU Member States. The highest ratio of debt to GDP was recorded in Greece at the end of 2015 (176.9%), Italy (132.7%), Portugal (129.0%), Cyprus (108.9%) and Belgium (106.0%). Conversely, the lowest ratio of public debt to GDP recorded Estonia (9.7%), Luxembourg (21.4%) and Bulgaria (26.7%).

Countries that have an interest to invest in education can expect positive effects on the growth of competitiveness, the growth of well-being and the quality of life. On the other side, the countries that only proclaim the need to invest in education face to many insoluble problems.

The justification of the use of alternative sources supports also some negative consequences of long-term preference for public funds. The negative consequences are: the abuse of rights to education, which can be characterized as formal participation on education, passivity or arrogance against the obligation to obtain certain education that a society considers as the necessary minimum as well as a low efficiency of investments in education. Combination of public and private resources, internal and external resources may constitute acceptable solution. In reality, we can meet with the different perceptions of the use of public sources or private sources, as well as internal or external sources.

5. Conclusions and Recommendations

Economic theory does not have an unambiguous definition of human capital yet it can specify the basic attributes that most often appear in different definitions of human capital. These attributes are: the congenital and acquired skills and knowledge, innate talent, but also the acquired ability to think creatively as well as be adaptable to constantly changing conditions and inventive in creating new values. Other attributes that are considered when defining human capital are: personality characteristics, ability to establish contacts with other people, teamwork, but also good health and respect for moral principles. In this sense, investment in human capital can be perceived as an investment in versatile personalities. It can be assumed that in a situation where education will be considered as a prerequisite for successful finding a job as well as of a higher level of income and a higher standard of living then can be expect also higher willingness of households and firms to realize investment in education from private resources. Sustainability of changes in behavior is conditional upon adequate effects from investments in education.

Investment in education is an economic necessity for every person to be able to use his or her potential as well as for society. The society can create new values, and its political, social and civil institutions can work better. Size of investment in education is influenced by many factors as are: the economic level of the country, the demographic structure of population, prices of services provided by educational institutions and other factors. The success of the

placement on the labor market after graduation is one of the most important indicators of the importance of the acquired education.

Policy makers, civil society leaders will increasingly need to consider the preparedness of different age groups in the population for being re–skilled to meet the skills challenges presented by the Fourth Industrial Revolution. Well-qualified young people are uniquely positioned to meet the demand for newly emerging high quality job types in their country, whether at the vocational or tertiary level. A preparedness of older workers will require a focus on continuous lifelong learning and skills upgrading.

In today's complex and globally interconnected world, there is a bigger chance for those who have decided to invest in education. Expectations, however, may not be fulfilled if the real need of the labor market has not been respected when deciding on investment in education. In other words, the demand for specific graduates at different levels of education has not been taken into account when deciding about investment in education. An insufficient use of the potential of human capital is evidence of inadequate allocation of investment in education across EU Member States.

One of the most pressing issues of assessing the effectiveness of investment in education is an issue of appropriate indicators that provide a reliable picture of the effectiveness of investments in education. Other problems are the problems such as the quantification of various effects of education, the existence of varying rates of return on investment in education in the case of different people, in different countries, and in different time. The problems are associated with not accepting the fact that the returns from investment in education do not show up fully immediately but with some time delay. A serious problem is also the immediate migration of tertiary and secondary education graduates to other countries.

Measures which could contribute to the solution the some persistent problems in the field of investment in education.

The role of government as well as the institutions that are responsible for the size, structure and allocation the investment in education should be consist in permanent identification and actualization of the labor market requirements. The complexity of implementing this requirement results from the fact that can occur so principal changes of the requirements of the labor markets that not are predictable. A solution can consist in elaboration of the alternative education programs. The government and other institution are also responsible for the situation where it is possible to meet with underqualification or overqualification. In both cases, there is an inefficient use of resources. .

It is important, at the same time challenging to prepare people (potential students and their parents) for a fundamental change in the approach to deciding what kind of education they want to achieve. The persistent one-sided focus on social sciences is not responsible. The excess of

graduates in some directions, and the absence of the desired number of graduates of other directions, is not solvable without the active involvement of government institutions, schools, companies, parents and potential students. The situation is not solvable without the understanding of need the investment in education which creates favorable conditions for employment.

Information about possibility of transfer between selected industries and selected professions could be used as the source of information for the institutions who are responsible for retraining. The government should be ready for possible disproportions in labour market, and also to be able to create a diversified basis of national capabilities and skills.

Other measures: to increase interest in higher forms of education, in particular higher forms of tertiary education, in order to create conditions for growth of competitiveness and economic performance, as well as for a growth of the quality of life; to change the access of universities and other institutions that provide tertiary education in the direction of accreditation of such fields that required by the labor market; to ensure cooperation between government, representatives of universities and other institutions that provide tertiary education and firms (employers) in order to create conditions for the successful graduates of tertiary education to get a job in their home country; differences in financial evaluation should be ameliorated by non-monetary benefits (flexible working hours, part-time work, work at home, preventive health care, provision of pre-school facilities for children of the employees, a top - class facilities at a comparable level with foreign countries, promotion of internships at foreign workplaces, and much more); the government should consider the form of obtaining of the means that were spent on tertiary education in the case of graduates, who have successfully completed tertiary education, but decided to leave abroad. It can be a quasi a redemption or university as also other institutions that provide tertiary education can conclude a contract through which the graduate undertakes to take up employment in his home country for a certain period of time, for example 5 years.

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